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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,570	02/25/2002	Rainer Moerig	594-25573-US	3171

7590

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EXAMINER

TAYLOR, VICTOR J

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,570

Applicant(s)

MOERIG ET AL.

Examiner

Victor J. Taylor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- ☐ Interview Summary (PTO-413) Paper No(s) _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: *Office Action*.

DETAILED ACTION

Drawings

1. The drawings are objected to because improper margins under 37 CFR 1.84 or 1.152 in the drawing review form 948 attached to paper 8. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Prior Art

2. The prior art of record and not relied upon and is considered pertinent to the applicant as follows:

I. Andersen U. S. Patent 5,410,517 as cited in the IDS under item AE is further cited for the cascaded sweeping and for the cascaded linking vibrator sweeps with the windows and the listening time between the sweeps as found in lines 33-39 of column 2 in the Fleure U. S. Patent number 6,418,079.

II. Kenneth D. Andersen, GB 2,289,336 A is cited for the linking vibrator sweeps in the cascaded sweep sequence with the plurality of sweep segments with segment positioning and phaseing and recorded signals, see figure 2A and the abstract.

III. Jeffryes U. S. patent 6,519,533 is cited for the seismic data processing 180 in figure 1, the seismic stacking segment recorder 170 in figure 1, and the overlapping vibratory seismic sweeps 180 with the sweep listening time window 182 in figure 2.

IV. Allen U. S. 5,550,786 is cited for the seismic data processing with the model de-phasing see lines 25 to 50 of column 2.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Fleure in U. S Patent 6,418,079.

Fleure discloses seismic data processing in line 22 of column 4 and in line 23 of column 1, a plurality of sweep segments in line 14 of column 4, time windows in line 45 of column 4, and further discloses cross-correlation and seismic data processing in lines 9-14 of column 5.

With regard to claim 1, Fleure further discloses the limitations of comparing data by correlating a first low frequency reference signal with the first low frequency sweep and its associated listening gate 110a-110b that appears in the zone denoted by 210a and 210b. This corresponds to four seconds of data, (The listing time) with a bandwidth of 10-56 Hertz, which is the bandwidth of the low frequency sweep, the result of correlating the first low frequency reference signal and the second low frequency sweep and its associate listening gate signal and the second low frequency sweep and its associate listening gate 120a-120b that appears in the zone denoted by 220a and 220b. The correlation of the low frequency reference signal with the second harmonic 123a-

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123b from the second low frequency sweep appear within the window 223a-223b. The correlation of the low frequency reference signal with the third harmonics 124a-124b from the second low frequency sweep appears within the window 224a-224b. Finally, 230 is a result of the small overlap in frequencies of the reference low frequency sweep signal and the second high frequency sweep signal 122a-122b in figure 3 and in lines 20-45 of column 5. Fleure further discloses a plurality of sweeps 401a to 401d in figure 5.

Fleure further discloses the limitations of the plurality of data segments as the desired impulse response from the first and second seismic data impulse data receiving from the listening gates 220a-220b of figure 3 and in lines 1-5 of column 6.

Fleure further discloses the limitations of the window in line 45 of column 4 for the plurality of signals with a first and second sweep segment in line 50 of column 4 with the seismic processing in line 22 of column 4 and discloses changing data in the overlap step 410 using the filter windows 425-425d and stacking the combined signals 430 in figure 5 with the sweep segments in line 14 column 4 combined with the listening times in lines 5-60 of column 4.

As to claim 2, Fleure further discloses the limitations of first window 314a to window 314b with the second window 323a to 323b data segment in line 55-62 of column 5 is replaced by combining the data from the gate 220a to 220b of figure 3 and in line 4 of column 6.

As to claim 3, Fleure further discloses the limitations of stacking the data segments using the Klauder wavelet applied to the recorded in line 10 of column 7 to give the impulse response to the desired wavelet related to the stacking time derivative

of the received ground force signal to the desired wavelet for recording in lines 4-15 of column 7, and discloses the stacking of the record 420 by the combining of signals 430 in figure 5. Fleure further discloses the first sweep segment is used to generate the high frequency sweep of the second sweep segment in line 66 of column 4 with the detection of the sweep segments in line 6 of column 5

As to claim 4, Fleure further discloses the limitations of the listening time gate 120a to 120b in line column 5 extracted from the data segments in figure 3.

As to claim 5, Fleure further discloses the limitations of data segments cross-correlated in the record data line 42 of column 5, with the associated listening time gate in line 46 of column 5.

As to claim 6, Fleure further discloses the limitations of phase shift matching first segment to second segment and discloses in the prior art of Andersen US 5,410,517 the phase matching of data segments by rotation of each segment by a constant sequence of $360/N$ degrees in lines 33-50 of column 2. Fleure further discloses the limitations phase matching the data segments by using the Klauder wavelet in line 8 of column 7 using a minimum phase band limited impulse in line 5-20 of column 7 by combining 430 the segments in figure 5.

As to claim 7, Fleure further discloses the limitations of the second data segment 505b in figure 5 are a combination of the data segments combined 43-0 in figure 5.

As to claim 8, Fleure further discloses the limitations of combining using the Klauder wavelet in line 28 of column 6.

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As to claim 9, Fleure further discloses the limitations of the source signal is a vibratory source 401a in figure 5 producing sinusoid waveforms 405a in figure 5 which comprise a sine wave with the frequency and the wavelength and the time functions for the measurements commonly made in RMS values in lines 57-65 of column 3


As to claim 10, Fleure further discloses the limitations of the listing time data segment in line 25 of column 5 is signal combined with and initial data segment with four seconds of data correlated with the first frequency and the second frequency with its associated listening gate in line 25 to 37 of column 5.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 703-305-4470. The examiner can normally be reached on 8:00 to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-4509 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.


Victor J. Taylor
Examiner
Art Unit 2863
23 April 2003